

**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL SEARCH REPORT**  
(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>LAM/24677.1</b>	<b>FOR FURTHER ACTION</b>	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. <b>PCT/SG2004/000161</b>	International filing date (day/month/year) <b>31 May 2004</b>	(Earliest) Priority Date (day/month/year) <b>2 June 2003</b>
<b>Applicant</b> <b>MUL, Chin Pang Richard</b>		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b.  With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2.  Certain claims were found unsearchable (See Box No. II).

3.  Unity of Invention is lacking (See Box No. III).

4. With regard to the title,

the text is approved as submitted by the applicant.

the text has been established by this Authority to read as follows:

**5. With regard to the abstract,**

the text is approved as submitted by the applicant.

the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

**6. With regard to the drawings,**

a. the figure of the drawings to be published with the abstract is Figure No. 1

as suggested by the applicant.

as selected by this Authority, because the applicant failed to suggest a figure.

as selected by this Authority, because this figure better characterizes the invention.

b.  none of the figures is to be published with the abstract.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SG2004/000161

## A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. 7: F03B 13/00, 9/00, 17/06

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
Refer electronic database consulted belowElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
DWPI - IPC: F03B 1/-, 3/-, 7/-, 9/-, 17/00, 17/06 and keywords tower or tank or reservoir

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4054031 A (JOHNSON) 18 October 1977 :	
A	US 4345160 A (SMITH) 17 August 1982	
A	GB 2267317 A (MIRZA) 1 December 1993	
A	Derwent Abstract Accession No 98-540920/46, class Q55, RU 2108482 CI (GORLOV) 10 April 1998	

Further documents are listed in the continuation of Box C  See patent family annex

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reasons (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 8 September 2004	Date of mailing of the international search report 14 SEP 2004
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized officer <b>R. SUBBARAYAN</b> Telephone No.: (02) 6283 2377

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SG2004/000161

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
2.  Claims Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3.  Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. Claims 1-21 are directed to a portable hydro-generator including a curved tubular housing with a drive portion and a return portion, and a plurality of paddles wherein the drive portion has a larger diameter than the return portion. It is considered that the drive portion having a larger diameter comprises a first "special technical feature".
2. Claims 22-23 are directed to a paddle, adaptable to be used in the invention of claim 1 wherein the paddle includes seals to prevent leakage and studs to increase the effective surface area. It is considered that these features of the paddle comprises a second special technical feature. Please note that the words adaptable to be used in the invention of claim 1 does not limit the scope of claim 22 to include the features of claim 1.

These groups are not so linked as to form a single general inventive concept, that is, they do not have any common inventive features, which define a contribution over the prior art. The common concept linking together these groups of claims is a paddle having a linkage to allow attachment to a subsequent paddle. However this concept is not novel in the light of many specifications e.g. GB 2267317 A (Mirza) 1 December 1993. Therefore these claims lack unity a posteriori.

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-21

## Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

## Box No. IV Text of the Abstract (Continuation of item 5 of the first sheet)

A portable hydro-generator (100), for the generation of power, including a tower (10) filled with a driving fluid (110), a semi-sealed curved tubular housing (80) with a drive portion (81) and a return portion (82), primed with a fluid (70), said drive portion (81) having a larger diameter than the return portion (82), an inlet means (60) to allow said fluid to enter said tubular housing (80), a plurality of paddles (30) to harness the kinetic energy of the fluid entering the curved tubular housing, a linkage assembly (34) to link said plurality of paddles, a drive chamber (83), a sprocket (50) within said drive chamber (83) to engage a portion of said paddles, and an output power generator attached to said sprocket. A paddle (30) adapted to be used in the hydro-generator includes a top surface (31), a bottom surface (32), seals (33) to prevent water leakage through the paddles, a linkage bar (34) to allow an attachment of said paddle to subsequent paddles, wherein the top surface of the paddle further includes studs (39) to increase the effective surface area of the top of the paddle.

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